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Technical cooperation among developing countries

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High-level Committee on the Review of Technical Cooperation among Developing Countries
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Thematic discussion on the role of technical cooperation among developing countries in science and technology for development

1. The session opened with the delivery of the keynote address, "Building Critical Science and Technology Capacities for Sustainable Human Development in the South", by Dr. M. H. A. Hassan, Secretary-General, Third World Network of Scientific Organizations (TWNSO). Dr. Hassan outlined three challenges to science-based development in the South: (a) how to reduce the growing North-South gap in the production and use of science and technology; (b) how to develop, sustain and use local capacities and leadership in science and technology; and (c) how to build a strong case for supporting the development of science and technology in the South. He also observed that developments in information and communications technologies (ICTs) such as email and the Internet presented opportunities, citing the example of the development of wireless technology in Ghana, and noted the growth of science and technology in Argentina, China and Mexico, which have established advanced research and training programmes and centres of excellence. The fact that larger countries of the South had a critical mass of scientists and technology experts also provided opportunities for other developing countries to benefit from their expertise.

2. To meet the challenges and take advantage of opportunities, Dr. Hassan then described a 12-point action plan for building capacities in science and technology. Its main features included: renovating education systems; setting up and strengthening units of excellence in science and technology with universities and institutions in the developing countries; launching major fellowship programmes to support graduate and post-graduate education at southern centres of excellence; establishing networks of institutions to address critical problems facing the South; sharing innovative and successful experiences in science and technology in developing countries; establishing and strengthening merit-based science academies; setting up interdisciplinary panels of experts in the South; obtaining the active participation of the private sector in the development of science and technology; mobilizing eminent expatriate scientists; holding South science summits; developing strong political will at the national and regional levels to support science and

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technology in the developing countries; and finding innovative ways to fund the promotion of cooperation in science and technology in the South.

3. Responding to comments and queries from several delegations, Dr. Hassan emphasized the value of participation by Ministers of Science and Technology in conferences involving heads of academies of science as a means of gaining national support for science and technology. He also recommended peer reviews as part of the process of selecting research and training institutions for inclusion in directories.

4. After the delivery of the keynote address the High-level Committee turned its attention to five presentations thematically related to the main topic of discussion.

5. The first panelist, Dr. Amitav Rath, Director, Policy Research International, addressed the High-level Committee on the topic "South-South Cooperation in Science and Technology for Development". Starting from the assumption that all socially useful activities embody sets of knowledge and technologies and thus fall in the science and technology category, Dr. Rath continued by observing that the South is the repository of much useful and practical knowledge that needs to be shared. However, in order for science and technology to contribute to development, knowledge must be made more readily available, its application must be expanded and it must be applied more effectively. An effective system for the creation and use of knowledge requires an educated, skilled workforce; education institutions that generate knowledge and train new people; scientific research laboratories; supporting institutional infrastructure; production and dissemination of scientific and technical information; a social and production system that demands and uses new knowledge and promotes new technologies; and policies and resources that support all of the above and enable their close integration.

6. In the present changing environment, characterized by continued breakthroughs in ICTs, biotechnologies and new materials, and alterations in the nature of science and knowledge systems, knowledge is increasingly a network activity requiring connectivity and cooperation. A more differentiated and heterogeneous South offers new opportunities such as complementarities for exchanges, effective use of scarce science and technology resources, and strategic alliances. In this context, the South must increasingly acquire and adapt knowledge available in the North while developing its own capacity to build and improve technologies for its own use and document its own efforts and the results of South-South cooperation to strengthen the South's belief in the importance of such activities.

7. To respond to the needs of developing countries with respect to knowledge systems and technologies, Dr. Rath suggested a framework for action that focused on two main actors: Governments of the South and the Special Unit for TCDC. The former should review and take stock of national programmes; allocate one per cent of gross domestic product for the support of science and technology; increase demand for knowledge applications and innovations; and provide improved networking and cooperation mechanisms. Taking into account that the Special Unit for TCDC is understaffed and underfunded, it must be selective in its activities, which should include: improving knowledge of all TCDC programmes worldwide; highlighting and exchanging successful and unsuccessful development experiments; increasing research cooperation; developing knowledge platforms in priority areas, including increasing the usefulness of WIDE; developing new criteria for the

selection of initiatives to be supported; and increasing the participation of new actors, e.g., the private sector, social sector, and foundations.

8. Dr. Rath recommended that developing countries approve intellectual property rights regimes that do not exceed the minimum requirements established by the World Trade Organization. Concerning the characterization of the North as primarily a producer of technology while the South is mainly a consumer and executor of technology, Dr. Rath noted that while the North produces more technology than the South, the South finds that much of northern technology is either too expensive or not useful. However, until the South builds its capacity, it must use northern technology, but it should be a consumer and producer in all markets.

9. Dr. Mervat Badawi, Director, Technical Department, The Arab Fund for Economic and Social Development, began her presentation, "South-South Cooperation in Science and Technology: The Role of the Arab Fund for Economic and Social Development", by providing a broad picture of the philosophies, issues and factors underlying Arab cooperation in science and technology. She stressed that Arab cooperation is strongly motivated by deeply rooted historical, cultural and geographical ties and that the Arab experience proves that such ties strengthen cooperation between third-world countries. Furthermore, such ties augur well for regional cooperation since the Arab countries value the strengthening of regional ties and cooperation with other southern countries.

10. Technology, described as a key to sustainable development, is a priority on the regional agenda since it is seen as a condition for the achievement of national and regional aspirations of economic prosperity and political independence. The development of an indigenous technological base will provide developing countries with the knowledge and skills necessary for the optimal use of their own human and natural resources and help in devising the production techniques relevant to their development strategies and cultural milieu.

11. The developing countries face two major policy-related issues with respect to the successful development and transfer of technology: selecting, transferring, absorbing and developing new technologies that are appropriate; and developing traditional technologies that are in use. The actual transfer and absorption of the selected technologies must maximize economic and social benefits, minimize economic and social costs; and initiate a positive feedback between technological development and other dimensions of development.

12. Following these broader policy statements, Dr. Badawi described the specific objectives of the Arab Fund in the area of TCDC, inter alia, (a) to foster the self-reliance of its member countries by enhancing their creative capacities to find solutions to development problems in keeping with their own values and needs; (b) to promote and strengthen collective self-reliance among developing countries through the sharing of experience and resources and the development of their complementary capabilities; and (c) to strengthen regional information systems and communication networks.

13. The Arab Fund plays a role in the creation of institutions and networks for science and technology in areas such as food security, information technology and health; supports an extensive research programme in, inter alia, management of production systems, natural resource management, and institutional strengthening; and a variety of initiatives including the Global Campus, which provides a distance

learning platform that involves the delivery of tailored academic programmes over the Internet to a worldwide student pool using state-of-the-art information technology.

14. To achieve its objectives, the Arab Fund collaborates with a wide range of actors, including Governments, United Nations and Arab League specialized organizations, national and international agricultural research systems, NGOs, and the private sector.

15. "South-South Cooperation in Science and Technology for Food Security: The WARDA Experience" was the topic presented by panelist Dr. Kanayo F. Nwanze, Director General, West Africa Rice Development Association (WARDA). Dr. Nwanze provided an overview of the role of WARDA in South-South cooperation in response to its mission with respect to food security and poverty reduction in West and Central Africa, chronicling in particular its role in the development of new rice varieties for Africa, known as NERICA.

16. The research programmes of WARDA, which is made up of 17 West and Central African Member States, are directed towards providing appropriate responses to the challenges of the African environment since agricultural development constitutes the backbone of economic development. In addition, experiences have shown that for Africa, indigenous agricultural research is a prerequisite to reliable food surpluses, with the latter being a pre-condition for the development and expansion of the industrial sector.

17. Rice is one of the major food crops in the farming systems of sub-Saharan Africa, with an estimated cultivated area of about 6.4 million hectares. While the importance of rice varies by region, West Africa is the leading subregion, with 64 per cent of area and 62 per cent of production in Africa. Recognizing that agricultural development in sub-Saharan Africa required a radical shift from traditional thinking and approaches, coupled with in-depth empirical understanding of local environmental and socio-economic conditions, WARDA began to develop technologies that were adapted to the sub-Saharan Africa environment without modifying that environment to fit the technology.

18. The NERICAs produced by WARDA based on crosses between indigenous African rice (Oryza glaberrima) with high-yielding Asian rice (Oryza sativa) offer a number of advantages: a high yield potential and a short growth cycle, weed competitiveness and resistance to major African pests and diseases, a high protein content, and, often, greater drought tolerance and acidity resistance than local cultivars. Currently grown by farmers in all 17 WARDA member countries, their adoption and spread are attributed to a participatory research approach in varietal selection and community-based seed production.

19. The success of the NERICA experience results from effective partnerships, including South-South and triangular collaborative relationships. Support from the Special Unit for TCDC, the Government of Japan, the Rockefeller Foundation, Gatsby Foundation and the Department for International Development has contributed significantly to such an achievement.

20. Dr. Gordon Conway, President, The Rockefeller Foundation, addressed the High-level Committee on "The Role of Private-sector and Non-profit Organizations in South-South Science and Technology Cooperation: The Rockefeller Foundation Experience". South-South collaboration, particularly in the area of public health, has

been of interest to the Rockefeller Foundation since its beginning. According to Dr. Conway, several factors have contributed to increased South-South collaboration, inter alia, an increasing global market, growing heterogeneity of developing countries, the need for stronger countries to help those that are weaker, a decline in official development assistance and the high growth of private investment in the North. South-South cooperation may be a major route by which the poor can benefit from globalization.

21. Dr. Conway identified several mechanisms for South-South collaboration, which often have both positive and negative consequences. The creation of regional centres to sponsor high-quality research, e.g., the African Economic Research Consortium in Nairobi, a public not-for-profit organization, can lead to the creation of a critical mass of very high-quality research; however, it can also drain talent from other countries. Formal linked institutions connect supervisors of fellows in universities, thereby increasing university capacities and leading to cross-fertilization. While this can be a powerful mechanism if it works well, it is expensive and requires considerable effort to maintain. Alliances, e.g., the Forum for African Women Educationalists, which promotes female education in Africa, is also an effective instrument when it involves the right people and subjects. Research and training partnerships, information networks and technology transfer represent other mechanisms that can play a role in South-South collaboration.

22. Numerous benefits can result from collaboration, e.g., a breakdown in the isolation of countries, cross-fertilization of ideas, strengthening of competencies, legitimization of new development thinking, especially with respect to ideas originating in the South, and the cushioning of science and technology from political and economic shocks. However, there can be a negative side to collaboration, which may simply reinforce existing outdated structures, compensate for weak institutions rather than helping to transform them, or shift resources away from necessary investments in local institutions. If there is only one source of support, the collaboration risks being subject to the whims of that donor.

23. To increase the likelihood of successful collaboration, it is important to ensure that (a) a range of support is obtained from a range of donors, especially Governments; (b) the objective is clear, that is, it should not be expressed as a general notion that some good will result from the effort; (c) goals are well defined; and (d) the advantages of the particular mechanism to be put in place are clear.

24. The thematic discussion concluded with the presentation "Innovative Models of South-South Cooperation" by Dr. Keiichi Muraoka, Director, Donor Coordination Division, Planning and Evaluation Department, Japan International Cooperation Agency (JICA). While the Government of Japan actively supports South-South cooperation both multilaterally and bilaterally to contribute to the transfer of technology suitable for the level of development of the recipient countries, Dr. Muraoka focused on bilateral activities.

25. He briefly described the nature and objective of several types of schemes used by JICA to carry out South-South cooperation, including third-country training, dispatch of experts, partnerships, tripartite cooperation, and the networking of institutions. The objectives of third-country training, which takes place in a particular region where developing countries have a common base in terms of natural, social and cultural factors, are to transfer the technology and know-how of Japan in a form that is compatible with local conditions, and to promote TCDC. In

1999, 128 courses offered under this programme involved 2,344 participants in 137 participating countries. The use of personnel from developing countries as experts has been a form of technical cooperation since fiscal year 1994. In general, experts either complement and support Japanese experts in a third country or develop and spread the achievements of Japan's technical cooperation to a third country. The role of JICA in tripartite cooperation was illustrated by the Rural Development and Resettlement Project in Cambodia, which has the goal of improving the livelihood of refugees resettling in the provinces of Kompong Speu and Takeo through the establishment of infrastructure in rural areas. This project involves the collaboration of the Government of Japan with UNDP, UNOPS and members of the Association of South-East Asian Nations (ASEAN). The Government of Japan has also concluded partnership agreements with two countries in Asia (Singapore and Thailand) and two in Africa (Egypt and Tunisia) while similar programmes have started in Latin America (Brazil and Chile); other agreements are under discussion. The networking of institutions is a new undertaking that uses existing institutions for regional cooperation, e.g., the Southeast Asian Engineering Education Network (SEED-Net).

26. Dr. Muraoka stressed the importance of needs assessments, feedback, follow-up, networking, effective use of information technology and an evaluation system in the success of South-South cooperation efforts.